

transverse oblique median band of dark tawny reddish brown from the middle of the costa to the dorsum before the tornus, this is met by a diffused shade of a scarcely paler tint coming from the base and overflowing the dorsal half of the wing, there is also a costal shade on the outer third reaching to the apex; cilia tawny. *Exp. al.* 20 mm. *Hind wings* greyish, with a tawny suffusion on their outer half above the middle; cilia greyish. Underside of both wings with the costal and terminal portions overspread with tawny reddish ochreous, somewhat reticulated, the remainder being grey. *Abdomen* brownish grey. *Legs* greyish ochreous.

Type, ♂ (61145) Mus. Wlsm.

Hab. E. CHINA—Omci Shan, VI.–VII. Unique.

[To be continued.]

LXII.—*Some new or little-known Neotropical Scorpions in the British Museum.* By R. I. POOCK.

Family Buthidæ.

Genus TITYUS, C. Koch.

Tityus Simonsi, sp. n.

Differing from *T. ecuadorensis typicus*, which also occurs at Loja, in having the upperside of the trunk a uniform blackish brown, without yellow bands, the legs not variegated, but yellow at the base, and becoming lightly infusate upon the femora and patellæ, and the whole hand blackish or brownish red, the finger-tips only being yellow; tail with segments 1–3 pale above, black along the middle line below and posteriorly on each side, much as in *T. ecuadorensis*; fourth and fifth segments and vesicle blackish; sterna uniformly pale.

Trunk granular and crested above, as in *T. ecuadorensis*; sterna of abdomen coriaceous, the first and second without large punctures; fourth and fifth finely granular, the former with a pair of weak keels, the latter with four granular keels, the external abbreviated posteriorly.

Tail granular and crested practically as in *T. ecuadorensis*; *vesicle* wider than brachium, furnished with a spine which is much smaller and closer to the base of the aculeus than in *T. ecuadorensis*, much resembling, in fact, the spine of *T. insignis* or *T. obtusus*.

Chelæ granular and crested as in *T. ecuadorensis*; hand wider than brachium; movable finger with 14 rows of teeth.

Pectinal teeth 17-18

Total length 65 millim., carapace 6, tail 37.

Loc. Loja, 2000 m. (*P. O. Simons*).

Family Chactidæ.

Genus MEGACORMUS, Karsch.

Megacormus segmentatus, sp. n.

Colour a tolerably uniform reddish brown; terga with traces of three pale spots, one median and one at each lateral angle; legs yellow, variegated with deep brown.

Closely allied to *M. granosus*, but differing in having the shaft of the pectines very distinctly segmented, consisting of an apical, a median, and two large basal sclerites.

Pectinal teeth 4.

Total length 33 millim.

Loc. Atoyac in Vera Cruz (*A. Dugès*).

Genus PLESIOCHACTAS, nov.

Allied to *Megacormus*, Karsch, but with the carapace broad and squarely truncate in front; the stigmata elongate and slit-like, not with the ends strongly curled round as in *Megacormus*, and with distinct "fulcra" on the pectines.

Type *P. Dugesi*, sp. n.

Plesiochactas Dugesi, sp. n.

Colour nearly black, varied with yellowish red; terga with a pair of large yellow spots on the posterior border; coxæ and legs yellowish red, the coxæ clouded, the legs strongly ringed with black.

Carapace as long as caudal segment $1 + 2 + \frac{1}{2}$ of 3, a little longer than fifth, coarsely granular; *terga* coarsely granular, the posterior terga finely and closely granular as well; *sterna* and *coxæ* completely smooth, densely punctured, the last *sterna* only weakly granular, with a median and a pair of lateral abbreviated crests.

Tail with crests evenly and coarsely granular, the intervening spaces sparsely granular, except on the upperside, which has a densely granular median patch; vesicle granular, fusiform, elongate.

Chelæ with strongly granular crests, intervening spaces sparsely but rather coarsely granular; brachium with a few

strong teeth in front and a row of 12 setal pores below; hand a little wider than brachium, its width about two thirds the length of the underhand; hand with 7 granular crests; the external finger-keel strong; *fingers* long, slender, in contact, the movable quite as long as the carapace and considerably longer than the underhand.

Pectinal teeth 8-9.

Measurements in millimetres.—Total length 44; length of carapace 6; tail 14; underhand 4.5; movable finger 6.5; width of hand 3.

Loc. Atoyac in Vera Cruz, Mexico.

One specimen of this interesting new species kindly sent to the British Museum by Dr. A. Dugès.

Genus CHACTAS, Gerv.

Chactas Simonsi, sp. n.

Colour entirely black throughout, except for the tarsi, vesicle, lower side of cephalothorax, and middle of first three abdominal sterna, which are brown.

Carapace almost granular throughout, smooth and punctured round the median eyes and on the summit of the tubercle; frontal lobes rounded; lateral eyes but little prominent, median eyes rather more than a diameter apart.

Terga sparsely covered in their posterior half with coarse scattered granules, more thickly granular at the sides.

Sterna smooth, pitted with a few coarse punctures and obsoletely punctulate.

Tail tolerably thick; third segment as wide as long, fifth only a little more than twice as long as wide; first and second segments quite smooth and polished below, third roughened with weak granulation, fourth granular throughout but without median keels, fifth also coarsely granular and normally keeled below; inferior and superior lateral keels strong and subdentate, inferior lateral keel distinct on third and fourth, just traceable on second segment; lateral and superior surface of tail with a few coarse granules, upperside of fifth segment finely granular; vesicle granular below, wider than fifth caudal segment and wider than high.

Chelæ: humerus granular above; brachium roughened above, with low squamiform granules, coarsely granular posteriorly, furnished below with a series of 5 setal pores; hand as wide as the length of the underhand, its width about four fifths the length of the movable digit, smooth in the middle above, but sculptured with a punctured network, becoming coarsely granular externally and internally, inner surface coarsely granular,

especially in its upper half; biting-edge of immovable finger more than twice as long as basal width of the finger, armed on its basal portion with a spiniform tooth, which fits into a shallow excavation occupying nearly the basal half of the movable digit and emphasized in front by a low lobe.

Legs with femora granular above and below anteriorly (externally), smooth, except for a few granules on the femur of the fourth.

Pectinal teeth 7.

Measurements in millimetres.—Total length 68; carapace 9.5; tail 36; width of hand 7; length of movable digit 8.8.

Loc. Rio Amboke in Ecuador (*P. O. Simons*).

Allied to *C. Rosenbergi*, Poc., from Chimbo, but with the legs black, the terga not finely and closely granular, the tail more granular, especially on the lower surface of the third segment, &c.

Chactas lojanus, sp. n.

♀.—*Colour* as in *C. Rosenbergi*, but with the legs darker brown, although considerably paler than in *C. Simonsi*; vesicle ferruginous.

Carapace with anterior border more truncate than in *C. Rosenbergi*, the frontal lobes scarcely rounded and separated by a very narrow notch.

Terga more granular than in *C. Rosenbergi*, being mostly covered with granules, which are especially fine and close-set in the median impression and at the sides.

Tail much as in *C. Rosenbergi*, but more granular, the sides of the first and second segments granular down to the position of the inferior lateral keel, and the lower surface of the third also more granular and obsoletely keeled in the middle; third caudal segment longer than wide, fifth nearly three times as long as wide.

Chelæ very similar to those of *C. Rosenbergi*, but smooth, the fingers longer and more like those of *C. Simonsi*, the basal width of the immovable being less than half the length of its biting-edge.

Spines on *tarsi* long.

Pectinal teeth 7.

Male much like the female, but with upperside of trunk and tail dull, being closely covered with granules, the eminence on the carapace alone shining. *Chelæ* not longer than in female, but with the hand stouter.

Measurements in millimetres.—

	Total length.	Carapace.	Tail.	Underhand.	Movable finger.	Width of hand.
♀ ..	66	9.5	34	7.3	9	6.3
♂ ..	66	9	36	7.2	8.4	7.3

Loc. Loja, 2000 m., in Ecuador (*P. O. Simons*).

Genus TEUTHRAUSTES, Simon.

Teuthraustes oculatus, sp. n.

♀.—*Colour* black, vesicle and tarsi ferruginous.

Carapace with anterior border transverse, but distinctly notched in the middle line; frontal area very sparsely granular, mesially grooved, ocular tubercle high; three distinct lateral eyes; ocular tubercle, posterior portion of carapace on each side of the median groove, and area round tubercle smooth.

Anterior five *terga* quite smooth in the middle, sparsely granular laterally, without trace of enlarged tubercle on each side on the posterior margin.

Sterna and *tail* as in *T. nitescens*, but the superior caudal keels a little more coarsely granular.

Chelæ as in *T. nitescens*, but the brachium and hand not visibly crested, the latter almost entirely smooth and very obsoletely sculptured.

♂.—Differs from the male of *T. latimanus* in being much more finely granular throughout, with larger ocular tubercle; hand much narrower, its width much less than length of fifth caudal segment; fingers longer, immovable considerably longer than its basal width.

Measurements in millimetres.—

	Total length.	Carapace.	Tail.	Width of hand.	Length of underhand.	Length of movable finger.
♀ ..	59	8.5	32	6.5	6	8
♂ ..	46	7	28	6	5.2	6

Loc. Sinche and Riobamba, 3000–4000 m. (*P. O. Simons*).

Since describing the species known as *T. latimanus* and *T. monticola*, the former from Corazon, 12,000 feet, the latter from Machachi, 9000–10,000 feet, I have seen several representatives of both forms from Machachi (*E. Whymper*), which convinces me that the differences are merely sexual. *T. nitescens* is probably only a subspecific form.

Family Vejovidæ.

Genus HADRUROIDES, Pocock.

Dr. Kraepelin, in the 'Tierreich,' admits only one species for this genus, giving the following list of synonyms:—*H. lunatus*, L. Koch, = *maculatus*, Thor., *parvulus*, Karsch, *charcasus*, Karsch, *Puaschi*, Karsch, and *robustus*, Boeris.

Although I have had no opportunity of examining the types of any of the forms bearing the names given above, I do not doubt that Kraepelin has confused at least two species, and very possibly more, under the name *H. lunatus*. One of these is the true *H. lunatus*, which, judging by L. Koch's admirable description, is represented by several Peruvian specimens in the British Museum. A second is what may be provisionally called *H. charcasus*; *H. maculatus* is probably a third.

Hadruroides lunatus, L. Koch.

Telegonus lunatus, L. Koch, Verh. z.-b. Wien, 1867, p. 235.

Hadruroides lunatus, Kraepelin, Das Tier., Scorp. p. 188 (1899) (in part).

♀.—*Colour* yellow; carapace and terga lined with black, each tergal plate marked with four black spots, one narrow on each side of the middle line and one broader near the lateral margin. Closely allied in structural features to the species described by Kraepelin as *H. lunatus* of L. Koch, but considerably smaller, with the inferior lateral keel of the fourth caudal segment smooth; the hand entirely smooth and narrower, its width in the adult being only equal to half the length of the carapace; the fingers when closed are distinctly separated at the base by an excavation on the immovable finger. Pectinal teeth 11–12.

♂.—Smaller than female, with frontal area and abdominal sterna finely and closely granular, pectinal teeth 14–15, and a considerably larger notch and lobe on the base of the immovable finger.

Measurements in millimetres.—♀. Total length 45; length of carapace 6, of tail 25. ♂. Total length 37; length of carapace 5, of tail 23.

Loc. Peru (without further history); two adult males and four adult females. Also a single female from Callao.

Kraepelin appears to have mistaken this species for the young of the form described as *H. charcasus* by Karsch. *H. maculatus*, Thorell, can scarcely be synonymous with this form, since Thorell expressly says:—"segmentum ventrale ultimum costis duabus tenuibus utrinque munitum." And

again, speaking of the tail, "*carinæ mediæ inferiores læves, in segmento quarto obsoletæ.*" Kraepelin completely ignores these statements. *H. parvulus* is compared by Karsch with *maculatus*, and is probably a synonym of it.

Hadruioides charcasus, Karsch.

Hadrurus charcasus, Karsch, MT. Münch. ent. Ver. iii. p. 138 (1879).

Hadrurus Paaschi, id. Berl. ent. Zeit. xxv. p. 290 (1881).

Hadrurus robustus, Boeris, Atti Soc. Modena, viii. p. 135.

Hadruioides churcasus, Pocock, Ann. & Mag. Nat. Hist. (6) xii. p. 329 (1893).

Hadruioides lunatus, Kraepelin, Tierr., Scorp. p. 188 (1899) (in part.).

Differing from *H. lunatus* in its much larger size, very thick band, of which the inner surface is granular, and large number of pectinal teeth. The largest specimen in the British Museum is a male, and measures 78 millim.

The pectinal teeth vary from 16–19 in ♀ and from 18–22 in ♂.

The British Museum has specimens from the following localities:—Paíta (*Hamb. Mus.*), Eten and Baños (*P. O. Simons*), in Peru; Bolivia (*Keyserling coll.*).

Hadruioides maculatus, Thorell.

Hadrurus maculatus, Thorell, Atti Soc. Ital. Sci. Nat. xix. p. 186 (1877).

? *Hadrurus parvulus*, Karsch, MT. Münch. ent. Ver. 1879, p. 135.

Loc. Callao (Peru).

According to Thorell's description this species differs from *H. lunatus* in having four keels on the underside of the last abdominal sternum and of the first, second, and third caudal segments. From Karsch's description it may be inferred that *H. parvulus* presents similar features.

Hadruioides carinatus, sp. n.

♀.—*Colour* yellowish brown, the terga sometimes showing traces of four narrow black bands; chelæ, legs, and tail paler yellow, variegated with small black spots.

Upside of *body*, except on the frontal area, which is smooth, covered with fine close-set granules, finer and closer than in *H. lunatus*.

Sterna smooth, impressed with coarse scattered punctures, the last granular at the sides and furnished with four strong but weakly granular keels.

Tail strong, the lateral surface of the anterior segments more granular than in *H. lunatus*, the inferior median

keels obsolete only on the fourth, strong on the first and second, weaker on the third, finely granular on the first; inferior lateral keels weakly granular on segments 1-4; superior lateral keel of fifth smooth, not granular; vesicle nearly smooth, finely and closely granular below, not so wide as in *H. lunatus*.

Chelæ much as in the latter, but the hand smaller and quite smooth; immovable finger lightly excavated at base; width of hand exceeding that of brachium, a little less than length of underhand, the latter about two thirds the length of the movable finger.

Pectinal teeth about 18.

Femora and patellæ of third and fourth legs distinctly granular.

♂.—Like the female, but with the sterna finely coriaceous, the tail a little longer relatively, and the vesicle more lengthened; *chelæ* with hand at most a little shorter than in female, but the immovable finger with strong lobe and basal excavation, so that when closed a distinct wide space is left between the base of the fingers.

Pectinal teeth 19-21.

Measurements in millimetres.—

	Total length.	Carapace.	Tail.	Width of hand.	Length of movable finger.
♀ ..	56	7	33	3	6
♂ ..	52	6.5	34	3	6

Loc. Baños, 3000 m., near Cajamarca, in Peru (*P. O. Simons*).

Apparently allied to *H. maculatus*, Thor. (*Atti Soc. Ital. Sci. Nat.* xix. p. 186, 1876), from Callao, which also has the median keels present on the last abdominal sternum and on the first three caudal segments, but differing in having the upper edges of the fifth caudal segment smooth and not densely granular.

Hadruiroides leopardus, sp. n.

(Typical lowland form.)

♀.—*Colour* yellow, spotted and banded with black; sides of carapace banded with black; frontal area with median stripe; terga yellow, marked with four black spots and a black lateral margin; sterna pale, the last only with two dark lines on the keels, last marbled with black at the sides, spotted below; legs and *chelæ* spotted with black.

Trunk finely granular above, frontal area smooth; sterna smooth, the last granular laterally and furnished with a pair of lateral granular keels.

Tail with the median keels on segments 1-4 absent, as in *H. lunatus*; the inferior-lateral keels distinct and finely granular, the superior and superior-lateral keels and the spaces between them distinctly granular; superior edges, lateral and inferior surface of fifth caudal segment, and vesicle granular.

Chelæ: humerus with superior and anterior granular crests; brachium smooth, punctured, without distinct crests, the inferior crests on the anterior side alone being weakly granular; hand smooth, narrow, barely as wide as brachium, its width less than length of underhand and a little less than half the length of the movable finger; fingers in contact throughout, neither lobate nor sinuate.

Pectinal teeth 12-15.

♂.—Like the female, but with the upperside of the trunk more granular; the frontal area only smooth in the middle; sterna also finely shagreened throughout. Chelæ as in female.

Pectinal teeth 15-17.

♀.—Total length 36 millim., carapace 4.5, tail 19.

Loc. Eten (sea-level), Peru (*P. O. Simons*). Several adult males and females.

Subspecies vittatus, nov.
(Mountain form.)

Nearly allied to the typical form, but much blacker, the terga being black and marked with five longitudinal yellow bands, the black patches being much larger than in *H. leopardus*. The inferior-lateral crests of the tail are smoother than in the typical form and the tail more robust. Male unknown.

Pectinal teeth 14-16.

Total length 40 millim., carapace 5, tail 25.

Loc. Baños, 3000 m., near Cajamarca in Peru (*P. O. Simons*).

Synopsis of the Species.

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|--|--------------------|
| a. Last abdominal segment and anterior three caudal segments furnished below with <i>four</i> keels. | |
| a ¹ . Superior-lateral edges of fifth caudal segment smooth. | <i>carinatus</i> . |
| b ¹ . Superior-lateral edges of fifth caudal segment granular | <i>maculatus</i> . |
| b. Last abdominal sternum and anterior three caudal segments with median keels absent. | |
| a ² . Brachium without crests above, not wider than hand; fingers in contact throughout in the adults of both sexes, neither sinuate nor lobate | <i>leopardus</i> . |
| b ² . Brachium strongly crested, narrower than hand; fingers lightly or strongly sinuate. | |
| a ³ . Small, 30-40 mm. in adult: pectinal teeth 11-15 (♂ ♀); hand not granular, fingers more strongly lobate; width of hand in adult only about half the length of the carapace | <i>lunatus</i> . |

- b*³. Large, 60-80 mm. in adult: pectinal teeth 16-22 (♂ ♀); hand granular internally, fingers weakly lobate; width of hand in adult much exceeding half the length of the carapace *charcasus*.

Note.—Mr. P. O. Simons also collected two species of Bothriuridæ, namely *Brachistosterus Ehrenbergi*, at Eten in Peru, and *Bothriurus coriaceus*, Pocock, at Baños.

With regard to Kraepelin's determination of the species of the genus *Bothriurus*, it may be remarked that there is no justification for the retention of the name *chilensis*, Molina, for the species I have described as *B. signatus*. The name *Scorpio chilensis* of Molina may have been founded upon a species of *Hadruroides*, or *Caraboctonus*, or *Bothriurus*, or, indeed, upon almost any of the species of Bothriuridæ or Vejovidæ that occur in Chili. The fact that Karsch identified a particular species as probably referable to the *Scorpio chilensis* of Molina has little or no value in settling what *chilensis* really is. Hence, since it is more than doubtful that *B. signatus*, Pocock, = *Scorpio chilensis*, Mol., it is indefensible to assign the latter name to the former species.

BIBLIOGRAPHICAL NOTICE.

Die Lepidopterenfauna des Bismarck-Archipels. Mit Berücksichtigung der thieryeographischen und biologischen Verhältnisse systematisch dargestellt. Von Dr. ARNOLD FAGENSTECHE, Wiesbaden. Zweiter Theil: *Die Nachtfalter.* Mit 2 col. Tafeln. (*Zoologica*, Heft 29.) Stuttgart, 1900.

THIS is the second and concluding part of a work of which we had the pleasure of noticing the first part, which contained the Butterflies, a few months ago. Some pages of general observations are prefixed to the second part, in which the author remarks that the fauna of the Bismarck Archipelago is most nearly related to that of New Guinea and the Moluccas to the west, and to that of the Solomon Islands to the east, and of Australia to the south. These countries contain a great number of moths of identical or representative species, especially among the Pyralidæ, a group remarkable for the vast range of many of the species which it includes. The systematic part of the book will be chiefly interesting to specialists, and the descriptions and remarks of previous authors are freely utilized to complete the subject so far as it is known. After this we find a detailed analysis of the distribution of the various families belonging to the fauna in other parts of the world, alphabetical indices of genera and species, supplementary notes to the first part of the book; &c.